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ABSTRACT

As studies of organizational development have focused increasingly in recent years on stages of decline and death, theories of revolutionary adaptation have gained currency. The theory of organizational retrenchment developed in this paper is divided into five chronological stages: (1) preresponse, (2) emerging awareness and buying time, (3) alarm and relatively safe responses, (4) crisis and confrontation, and (5) postcrisis equilibrium. Hypotheses developed from these five stages were tested through case studies of declining enrollment in 53 school districts over a 10-year period. A questionnaire/checklist and followup interview examined 15 variables divided into 3 categories: organizational structure, including such variables as pupil-teacher ratio and per-pupil expenditures; pattern of relationship, including board-superintendent conflict and superintendent succession; and strategic responses, such as hiring freezes and school closings. Results of five statistical tests of collected data reveal (1) relatively abrupt change over the phase of decline, (2) a rigidifying tendency in organizational structure and the pattern of relationships, (3) relatively late utilization of strategic responses to declining enrollment, and (4) a tendency toward revolutionary adaptation to decline. Such findings indicate that educational organizations should anticipate that each new threat will bring an initial period of relative rigidity, followed by a period of revolutionary change. (JBM)

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STAGES IN DECLINE: HOW AN EDUCATIONAL ORGANIZATION SCALES DOWN[1]

Michael A. Berger

An analysis of the changes in structure and strategy of 53 school districts experiencing enrollment decline between 1970 and 1980 was made to determine whether change was evolutionary or revolutionary in scope. The data show that (1) there was a tendency toward rigidity, (2) change was relatively abrupt over the various phases of decline, and (3) adaptation tended to be revolutionary.

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Major Products Emanating from
Organizational Responses to Decline
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Michael A. Berger, PhD
Peabody College of Vanderbilt University
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This paper is one of several products emanating from the research titled Organizational Responses to Decline. The complete list (to date) is as follows:

1. Berger, M. Two paradoxes in managing decline: Comprehensive planning and participation. In Kae H. Chung (ed.). The 1982 Academy of Management Proceedings. Loveland, Colorado: Lithographic Press, 1982, 334-338.

   This paper was also awarded the "1982 Best Paper in the Public Sector Division" of the Academy of Management at its 1982 Annual Meeting in New York, August, 1982.

2. Berger, M. Class size is not the issue. Paper presented at the National School Board Association Annual Meeting, Atlanta, April, 1982.

3. Berger, M. Organizational Responses to Decline: Summary Report. Submitted to the National Institute of Education, December, 1982.

4. Berger, M. Managing enrollment decline: Current knowledge and future applications. Peabody Journal of Education, 1983, (Forthcoming).*

5. Berger, M. Neighborhood schools: The new (?) legal response to enrollment decline and desegregation. Urban Education, 1983, (Forthcoming).**

6. Berger, M. Retrenchment policies and their organizational consequences. Peabody Journal of Education, 1983, (Forthcoming).*

7. Berger, M. Stages in decline: How educational organization scales down. Educational Administration Quarterly, 1983, (Under review).**

8. Berger, M. Studying enrollment decline (and other timely issues) via the case survey. Educational Evaluation and Policy Analysis, 1983, (Forthcoming).**

9. Berger, M. Why communities protest school closings. Education and Urban Society, 1983, (Forthcoming).**

10. Boone, C. The effects of succession on organizations in decline. Doctoral Dissertation, Peabody College of Vanderbilt University, Nashville, Tennessee, April, 1982.

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STAGES IN DECLINE: HOW AN EDUCATIONAL ORGANIZATION SCALES DOWN

The study of organization development using a life cycle metaphor has a long and rich history in the organization literature.[2] While earlier works tended to focus on organizational emergence (birth), growth (adolescence), and institutionalization (middle age), current economic and political trends have stimulated an interest in the latter stages of the organizational life cycle, namely, decline and death.[3]

This recent preoccupation with decline is particularly apparent in the growing number of issue papers, case studies, and prescriptive "cook-books" on enrollment decline.[4] In general, these papers do a good job on the political dilemmas, community involvement processes, and problems of coping with enrollment decline, but are limited in at least three ways. First, they typically describe the events in one and only one particular district. Thus, generalization to other districts is highly problematic. Second, they often concentrate on the most divisive issue of decline: school closings. Therefore, they neglect a whole host of other dimensions of the retrenchment process. Finally, while focusing on the decline phase of the organizational life cycle, they often fail to specify the stages within that phase by which an educational organization reaches what Richard Cyert calls "a new equilibrium at a smaller scale of operation."[5]

The purpose of this paper is to attempt to overcome these deficiencies. After proposing a developmental perspective on retrenchment, the paper describes a longitudinal study of school districts whose enrollment decline experiences were reported in a case study. The paper concludes with a discussion of the major implications of this investigation.

THEORETICAL BACKGROUND

The focus of this paper is the stages of the retrenchment process,

defined as the phases by which an educational organization changes its basic structure and behavior in response to declining enrollment and rising costs in its immediate environment.

Several scholars have described the process of organizational retrenchment. For example, Hedberg at al. conceive three phases: weathering the storm, unlearning yesterday, and inventing tomorrow.[6] Berman and McLaughlin see a sequence of mobilization of support, implementation of retrenchment plans, and institutionalization of the change efforts.[7] Levine et al. also use a three stage model: denial and delay, stretching and resistance, and deeper targeted cuts.[8] Behn sees two basic phases: across-the-board cuts and selective cuts.[9] Finally, Babcock conceives a two phase process of modifying and adapting responses.[10] Figure 1 summarizes these frameworks.

Figure 1 about here

The retrenchment theory to be proposed and tested here has its roots implicitly in the above models but more explicitly in the Selznickian conception of organizational character and management model of revolutionary adaptations to environmental threat. Each will be discussed briefly in turn.

Organizational Character

At the heart of the present perspective is the concept of organizational character. Drawing an analogy to the psychological concept of character, Selznick argued that an organization's character has four attributes.[11] First, it is a historical product; it reflects an accumulated set of experiences which, in turn, shape its habitual ways of reacting. Second, it is an integrated product; it has a relatively enduring structure and pattern

of behavior. Third, it is functional; it erects barriers between itself and the outside world but will engage in reconstruction to solve problems if necessary. Fourth and finally, it is dynamic; it generates new forces which enable it to abandon the old ways and create new ones when change is required.

Revolution In Organizational Adaptation

The idea of revolutionary adaptations is not new in the literature.[12] Essentially, the view is that organizational adaptation is characterized by periods of dramatic change in which there are reversals (i.e., significant differences) across a number of variables of strategy and structure.[13] Two reasons are offered in support of this contention. First, when a new situation occurs, it destroys the previous gestalts and forces the organization to "unlearn yesterday" and "invent tomorrow." Secondly, rigidity in the face of environmental threat often creates a lag in adaptation. When excesses and problems build up, major corrective action is required to re-align the organization with its new environment. The theory argues that gradual change may be the dominant tendency, but it will be interrupted by dramatic periods of change in many elements of strategy and structure.

With these perspectives as a background, the next task is to operationalize the theory. This requires the specification of stages and the formulation of hypotheses to predict the variations in organizational structure and strategy over time.

TOWARDS A DEVELOPMENTAL THEORY OF ORGANIZATIONAL RETRENCHMENT

The theory of retrenchment developed below covers the period from a district's year of peak enrollment (PE) to 10 years after (PE + 10). The 10-year timeframe was chosen to evaluate changes over time because some

changes might tend to occur late in the decline cycle. Also, data were available over a 10-year history for several districts. The theory is divided into five chronological stages. Although the length of each stage may vary in real life, the order of the stages remains relatively the same (see Figure 2).

Figure 2 about here

Stage 1: Pre-Response (PE to PE + 2)

Declining enrollment can be traced to a lower fertility rate in the community, more families moving out of the district than moving in, and/or white flight as a consequence of desegregation. Whatever the reason, educational leaders are rarely aware of the ultimate impact of declining enrollment in the first stage. This is not because they are unaware of enrollment trends, as some have suggested. Instead, it is because they are still struggling with the problems of growth and overcrowding. They note the drop in enrollment but assume the downturn is only temporary. Coping with mobile classrooms, double sessions and teacher recruitment claims more attention that anticipating the adverse effects of decline.

As a consequence, decline-related responses such as school closings and referendum proposals, are highly unlikely. Staff and administration numbers remain fairly constant. Facility utilization and teacher-pupil ratios will be high and per-pupil expenditures will be relatively low as the district enjoys relatively high economies of scale.

Stage 2: Emerging Awareness and Buying Time (PE + 2 to PE + 4)

After several years of declining enrollment and increasing fiscal stress, the district experiences new (or more significant) budget deficits. Now it must attempt to balance its budget by increasing revenues, cutting costs,

or some combination of the two.

The first response will be to delay the choice between any of these options. In practice, the board will draw down existing surpluses, borrow from other funds (from the building to education fund, for example) and obtain short-term loans against next year's income (e.g., tax anticipation warrants). Other actions which are geared to buy time include allowing vacated positions to go unfilled and slowing down the rate of salary/budget increases. The dominant feeling is that these problems are only temporary and will be resolved without major disruption.

Stage 3: Alarm and Relatively Safe Responses (PE + 4 to PE + 6)

School boards begin the serious retrenchment process about four to six years into their decline cycle. By this time, enrollment decline and fiscal stress are more or less permanent conditions and there is the growing realization that this "temporary" problem will not go away.

The awareness leads to alarm, but a basic belief that certain strategies can reverse the situation. The board now attempts a combination of revenue generating responses (such as raising fees or proposing a referendum to increase the tax rate on assessed valuation) and relatively safe expenditure-reduction strategies (such as eliminating after-school and summer activities, cutting back on non-essential art, music and library programs, installing across-the-board supplies/materials cuts, and enacting a hiring freeze). Some reduction-in-force may be used but it will affect non-tenured teachers and staff.

With fiscal stress in the district now a reality, relations between the administration and the teachers become strained. The board begins to (1) formalize its RIF policies, (2) establish citizen committees on facility utilization (for possible school closings), and (3) bring in "objective"

outside experts. The general feeling is that while the fiscal problems may require some sacrifice, they are surmountable and that rational analysis and participatory processes will provide the necessary answers.

Stage 4: Crisis and Confrontation (PE + 6 to PE + 8)

The board eventually finds the fiscal problem is not surmountable and that technical rationality and participatory processes tend to exacerbate rather than reduce the tension. The board's problem is that many costs in a district are uncontrollable. Certain items, such as debt service, pension contributions, and matching funds for federally-mandated programs, represent fixed costs and account for a large percentage of the total budget. Moreover, the anti-tax sentiment in many communities makes it highly improbable that a referendum will pass. Almost by necessity, the board continues its earlier measures, but also turns reluctantly to the retrenchment strategies of school closings, significant program cutbacks, and deeper RIF actions.

The board's decision to close schools and/or cut staff creates a dramatic confrontation with the parties affected. Parents form "Save Our Schools" coalitions, attend board meetings in significant numbers, and voice their strong opposition to board decisions. Teachers increase their grievances, demand a "professional voice" in RIF matters, and openly challenge the board policies. Administrators are also likely to turn on the system. After months of public criticism, their position is, "This thing is bigger than all of us; we don't own the schools; let the community decide."

With the crisis affecting many areas -- program, staff and facilities -- there is the widespread feeling that: (1) the one big happy family is coming apart; (2) the problem will not be solved by relatively safe measures; and (3) the board must take new steps which are fiscally responsible but politically feasible at the same time. In other words, a simple "bricks

and mortar" approach will not suffice; special interests must be accomodated. As a result, the board makes the controversial decisions but will reverse itself several times (on school closings, for example) as the winds of politics blow through the district. The operative policy is"take action where there is the least resistance but justify it in rational-economic terms."

Stage 5: Post-Crisis Equilibrium (PE + 8 to PE + 10)

The previous confrontation stage slowly blends into a post-crisis equilibrium. As more and more of the affected parents realized how inevitable the situation is, three types of reactions tend to set in. Some people get discouraged and decide to leave the district, if they have not done so previously. Hirschman calls this option "exit" and it is exhibited by exhausted board members, beleaguered administrators, demoralized teachers, and alienated parents.[14] Others become resigned to the situation and decide to make the best of things. A third group remains ambivalent; they want to see actions to improve the school system but they are unwilling to make the personal investment to bring that improvement about.

Gradually, district responses to enrollment decline and fiscal stress become routinized and, hence, fade from the center of concern. Concepts such as RIF, school utilization, cost efficiency, and retrenchment become indelibly fixed in the collective experience and tend to obtain less attention (with some spasmodic recurrences) than new crises beginning to attract attention. As community and teacher protests wane, a new equilibrium sets in. The district has scaled itself down.

In summary, the theory contends that the adjustment of the organization's strategy and structure, in response to changes in its environment, occurs in approximately five stages. These stages begin with the belief that there

is no problem and move to the realization that the problem is real and cannot be solved by traditional strategies. As the costs build and the crisis deepens, major corrective action, revolutionary in scope, is required to realign the organization with its new environment. While some might argue that behavior in the district remains pretty much the same, that teachers still teach, board members still determine policy, and students still learn, the adaptation is, in fact, revolutionary because it involves a change in a significant proportion of variables of strategy and structure over a relatively short period of time.

Not only is there a drastic change in the structure of the district (fewer schools, teachers and students), there is a significant difference in strategy (e.g., early retirement programs, job sharing, bumping rights, school consolidation). More importantly, there is a significant change in attitudes: before declining enrollment, teachers could plan on job security; parents could depend on the schools their children would attend; and board members and administrators could rely on abundant resources to win acceptance of change. Under conditions of retrenchment, on the other hand, job security is problematic, school closings create a great deal of uncertainty, and resources are generally unavailable to obtain acceptance of change. In effect, the attitudes and expectations, as well as the organization's strategy and structure, undergo a significant transformation.

HYPOTHESES

Several hypotheses can be formulated to test this theory.

Hypothesis 1. Examining longitudinal data, there will be no significant differences ($p < .05$) for a variable between the various stages. This hypothesis will determine whether change is gradual (no differences) or abrupt (significant differences). The theory contends that change will be

relatively abrupt, thus, we should see a significant difference in the values of a variable across time.

Hypothesis 2. Examining longitudinal data, there will be no significant difference ($p < .05$) for a variable between early and late stages, where the early stageis PE+4 and the late stage is PE + 8. Hypothesis 1 simply tests for differences on a variable between the various stages. This hypothesis, in contrast, will determine whether the observed differences are between early and late stages. The theory predicts a district will exhibit rigidity in response to threat initially, then significant change later on. The PE + 4 vs. PE + 8 comparison was chosen to allow enough time for the threat to set in (PE to PE + 4) and to see whether change had occurred (PE + 4 to PE + 8).

Hypothesis 3. Examining longitudinal data, there will be no significant difference in the frequency of retrenchment responses between early and late stages. The theory predicts a board's reluctance to enact these responses. Thus, we should see a greater incidence of these responses later in the decline period than we do early on.

Hypothesis 4. Examining longitudinal data, there will not be a significant proportion of variables which show a difference between PE + 4 and PE + 10. The theory argues that by the time a school district reaches PE + 10, change will be revolutionary in scope. Changes are revolutionary if there is a significant number of variables which show differences between PE + 4 and PE + 10. If, on the other hand, the differences in the variables between PE + 4 and PE + 10 are insignificant, we will assume that structure and strategy has not changed very much.

METHODOLOGY

Because of the temporal nature of this theory, the present study used longitudinal data spanning a 10-year period. The basic approach was to

collect information on the same variables for the sample at five points in time after the peak enrollment (PE) year (PE + 2, PE + 4, PE + 6, PE + 8, PE + 10). As mentioned above, the 10-year time frame was selected to analyze the full range of district responses and because data were available.

Sample and Data Collection

A non-random sample of school districts whose enrollment decline experiences were reported in a case study was used to test the hypotheses. Originally, 208 cases of decline were discovered. Since the cases varied considerably in quality, 70 cases were initially chosen for analysis. To control for possible differences between early and late decliners, a sample of 53 districts whose peak enrollment year was on or before 1970-71 was selected for the final analysis. Case studies came from professional journals, fugitive (i.e., unpublished) documents, ERIC bibliographies, association papers, and other publications.

Data were collected via the case survey method.[16] The procedure involves the analysis of cases with a closed-ended questionnaire, called a checklist.[17] The checklist contains variables of interest to the researcher and can be aggregated to produce generalizations based on conventional statistical techniques. The method is particularly appropriate when a body of empirical evidence, such as the enrollment decline literature, has a large proportion of isolated, one-shot case studies.

After elaborate case search and checklist development, trained case analysts read the cases and filled out the checklists. A follow-up interview procedure with the district supplied missing data from the original case study. To control for unreliable checklist application (when different case analysts fail to see or judge case events in the same way), 36 of the 53 cases (68%) were reassigned to a second analyst to determine the degree

of consistency between two independent raters on the same district. On a random sample of 50 items for the 36 cases, the average Pearson's correlation coefficient corrected by the Spearman-Brown Prophecy Formula was .78. Jauch et al. suggest that a Spearman-Brown reliability coefficient of at least .67 is adequate for questionnaires, and hence, case survey research.[18]

Measures

Fifteen variables considered relevant to a district's strategic and organizational character appeared in identical form across the study's timeframe. Three categories were examined: organizational structure, pattern of relationships, and strategic responses.

The five organization structure variables were:

1. The facility utilization ratio -- defined as the number of students per school in a particular year divided by the number of students per school in the peak enrollment year (under the assumption that the peak enrollment year equaled full facility utilization);

2. The administration-instructional staff ratio -- defined as the average number of instructional staff per administrator (including principals);

3. The pupil-teacher ratio -- defined as the average number of students per teacher;

4. The per-pupil expenditures -- defined as the average costs (teacher salaries, professional support salaries, supplies/instructional expenses, administrative costs, maintenance and repairs, transportation costs, fixed charges, and debt service) per student (adjusted for inflation); and

5. The pupil-administration ratio -- defined as the average number of students per administrator in the district.

The three pattern of relationships variables were:

1. Board-superintendent conflict, measured on a five point Likert scale ranging from no conflict to intense conflict;

2. Board-community conflict, measured on the same Likert scale; and

3. Superintendent succession defined as whether or not the superintendent left the district during that particular time period.

The seven strategic responses were:

1. whether or not the board held a referendum to increase revenue;
2. whether or not the board served new clients;
3. whether or not the board rented out school facilities;
4. whether or not the board enacted a hiring freeze;
5. whether or not the board stimulated early retirement;
6. whether or not the baord reduced teachers in force; and
7. whether or not the board closed schools.

Data Analysis

Five statistical tests were employed in the present research. First, one-way analysis of variance (ANOVA) with repeated measures was used to detect differences in the interval level, time structured data. Bock argues that this test is suited to the analysis of group means when the times of observation are fixed in advance, in equal intervals, and the differences are sufficiently regular to be described by a simple polynomial model.[19] While it is true that the residuals are often correlated between the various time points, and the patterns of correlation can rarely be specified in advance, Bock contends that if the number of time points is not too large (five, in this case), ANOVA with repeated measures deals with this problem most effectively by using the within-group variation to estimate the covariance structure of the residuals. A biomed program was adapted for this purpose.[20]

To detect differences in the categorical data at each successive stage, the Cochran Q Test was selected. This approach is analogous to multivariate analysis of variance. The Cochran Q Test provides a method for testing whether

three or more matched sets of frequencies or proportions differ significantly among themselves.[21] The matching may be based on relevant characteristics of different subjects or, in this case, characteristics on the same subjects under different time conditions.

Once differences across time were detected, a Newman-Keuls post-hoc multiple comparison test was used to learn which combination of paired means differed significantly. This test is appropriate when the n's across time are equal, as they were in this study. For differences among the categorical data, a chi square test of independence (2 x 2 contingency ratio) tested the null hypothesis of no difference in the frequencies of the two stages.

Finally, a binomial test was used to assess the likelihood of an "x" number of frequencies in two classes of the same sample. For the last hypothesis, a test was needed to determine whether it was reasonable to assume that the proportion of significant variables in the sample was different from the proportion of insignificant variables. The binomial test is appropriate for this comparison.[22]

RESULTS

The 53 case studies were read and checklists for each case were completed. The data were analyzed to evaluate each hypothesis.

H_1: The Tendency Toward Abrupt Change

The first hypothesis is easy to test. If gradual change is the basic tendency in districts experiencing enrollment decline, we would expect to find no significant difference in the organizational character variables over the five stages. Values may change gradually, but the differences would not be statistically significant. If, on the other hand, abrupt change is the dominant tendency, then we would find a significant difference between the

various stages ($p < .05$).

Table 1 about here

The data in Table 1 show that for 11 out of 15 variables there was a significant difference in at least one pair of means or frequencies of the variables over time. For these variables, therefore, change was abrupt, rather than gradual. That is, there were significant differences between one stage and another. The next two hypotheses address the question of which pairs differed significantly.

H_2: The Tendency Toward Rigidity in Structure and the Pattern of Relations

The second hypothesis tests the assertion that school districts tend to exhibit rigidity in response to an environmental threat. This means that by the end of PE + 4 there will be a growing awareness of the enrollment decline problem but significant change in the structure and pattern of relationships variables will not occur for at least four to six years. If, on the other hand, rigidity is not the dominant tendency, we should expect significant differences between PE + 4 and PE + 6, or no differences at all.

Table 1 shows that five of the eight structure/pattern variables contained significant differences over time. To determine which pairs varied, a Newman-Keuls multiple comparison test evaluated the stage combinations on the five variables with a significant F-ratio. The differences between PE + 4 and PE + 6 (the immediate change response) and between PE + 4 and PE + 8 (the more rigid change response) are described in Table 2.

Table 2 about here

For the five variables under review, Table 2 reveals no statistically significant differences between PE + 4 and PE + 6. In four out of the five variables, on the other hand, there was a significant difference between PE + 4 and PE + 8. Moreover, the one variable (i.e., pupil-administration ratio) which did not show a difference between PE + 4 and PE + 8, exhibited a significant difference two years later (PE + 4 and PE + 10). Therefore, it appears than once an awareness of the enrollment decline problem occurred, it took up to four years to change on four variables and up to six years to change on the fifth variable.

H_3: The Tendency Toward Delayed Adaptive Responses

The third hypothesis, in null form, contends there will be no significant difference in the frequency of strategic responses between early and late stages. The research hypothesis, in contrast, asserts there will be a difference. When threat occurs, the district responds initially by using its well-learned strategies. As the crisis deepens however, the district cannot adapt through its normal repertoire and must turn instead to more unusual responses to insure survival. If we once again consider PE + 4 the early stage indicator and PE + 8 (and PE + 10) as the late stage indicators, differences in the frequencies of the various strategic response variables will support the delayed adaptive response hypothesis, whereas no differences in the variables will provide evidence for the null hypothesis.

Table 3 about here

Table 3 indicates there were six significant variables from the Cochran Q test. The frequency of initiating a referendum did not vary significantly over time. For the six significant variables, each revealed a significant different between PE + 4 and PE + 10. Moreover, the fre-

quencies of the significant variables increased over time, as the theory predicts. In other words, when we evaluate serving new clients, renting facilities, enacting a hiring freeze, stimulating early retirement, reducing teachers in force, and closing schools, we find a significant differences between the number of districts which selected these responses in PE + 4 and the number selecting the responses by PE + 10.

H_4: The Tendency Toward Revolutionary Change

The last hypothesis attempts to determine whether there will be a significant proportion of variables which show a difference between PE + 4 and PE + 10. The research hypothesis argues that change in declining districts is revolutionary in scope; that is, there will be a significant proportion of variables of structure and strategy which show differences between PE + 4 and PE + 10. If a significant proportion does exist, then we will conclude that a revolutionary change has occurred. If, on the other hand, the proportion of variables with differences between PE + 4 and PE + 10 is not significant, we will conclude that change is more evolutionary; that is, it occurs in some variables over time but not in a significant number.

Table 4 about here

The post-hoc comparison tests in Table 4 indicate that 11 of 15 variables showed a significant difference between PE + 4 and PE + 10. The binomial test was used to test the null hypothesis ($p_1 = p_2 = .5$) that the proportion of significant variables (11 of 15) was not statistically different from the proportion of insignificant variables (4 of 15). Using the binomial table in Siegel,[23] the probability is .05 of observing a frequency as small as 4 with an $n = 15$. Therefore, we reject the null hypothesis and

conclude that the number of significant variables is greater than the number of insignificant variables. The data show that adaptation to enrollment decline for the districts in this sample was revolutionary in scope.

CONCLUSIONS AND IMPLICATIONS

The interpretation of these results must be tempered by the possibility of a biased sample. The case survey takes as its unit of analysis cases written about a district's particular enrollment decline experience. If the cases are biased from the standpoint of either author distortion, fact misrepresentation, or low external validity to to other districts, the biases from the original cases are transmitted to the present study.

This qualification notwithstanding, the analysis of school districts in the process of retrenchment shows: (1) change is relatively abrupt over the phases of decline; (2) there is a tendency toward rigidity in organization structure and the pattern of relationships; (3) strategic responses to declining enrollment are utilized rather late in the decline cycle; and (4) adaptation to decline tends to be revolutionary in scope.

When educational organizations experience the fiscal threat of enrollment decline and inflation, they adjust to adversity by allowing certain excesses and problems (e.g., too many staff, too many facilities, too many programs) to build up. This rigidity, in turn, does <u>not</u> lead to incremental change on a piecemeal, continuous basis. Instead, late in the decline cycle there is a crisis which results in a significant change across a large proportion of structural and strategic variables. This revolutionary adaptation enables the district to reach its new equilibrium at a smaller scale of operation.

What are the implications of this perspective? From a research stand-

point, it appears that additional work is needed to draw a more representative sample, to measure other variables of structure process and strategy, and to refine the timing and duration of phases. Miller and Friesen argue that organizations change in a manner quite similar to the development of scientific knowledge.[24] They follow the Kuhnian notion that change is a "succession of tradition-bound periods punctuated by non-cumulative (revolutionary) breaks."[25] Additional research is needed to determine whether it is true that educational leaders require increasing amounts of threat before they destroy the old gestalts and create new ones.

From a practical standpoint, the theory helps to locate educational organizations in the process of retrenchment. While the two year stage timeframe may be more or less correct, the contention that one stage follows another enables educational leaders to predict the crises. It also permits the anticipation of certain phases and the development of strategies to smooth their occurrence. Finally, the theory provides a picture of how educational organizations change. Rather than expecting periods of continuous change and relative stability, for example, it may be more accurate to anticipate that each new threat will bring an initial period of relative rigidity, followed by a period of revolutionary change. It is hoped this study will encourage other researchers and practitioners to pursue these and related areas of inquiry.

NOTES

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Figure 1

Models of Organizational Retrenchment

PROPONENT	RESPONSE PHASES		
Hedberg et al.	Weathering the storm	Unlearning yesterday	Inventing tomorrow
Berman and McLaughlin	Mobilization of support	Implementation of retrenchment plans	Institutionalization of change efforts
Levine et al.	Denial and delay	Stretching and resistance	Deeper, targeted cuts
Behn	Across the board cuts	Selective cuts	
Babcock	Modifying responses	Adapting responses	

TIME

Figure 2

A Developmental Theory of Retrenchment

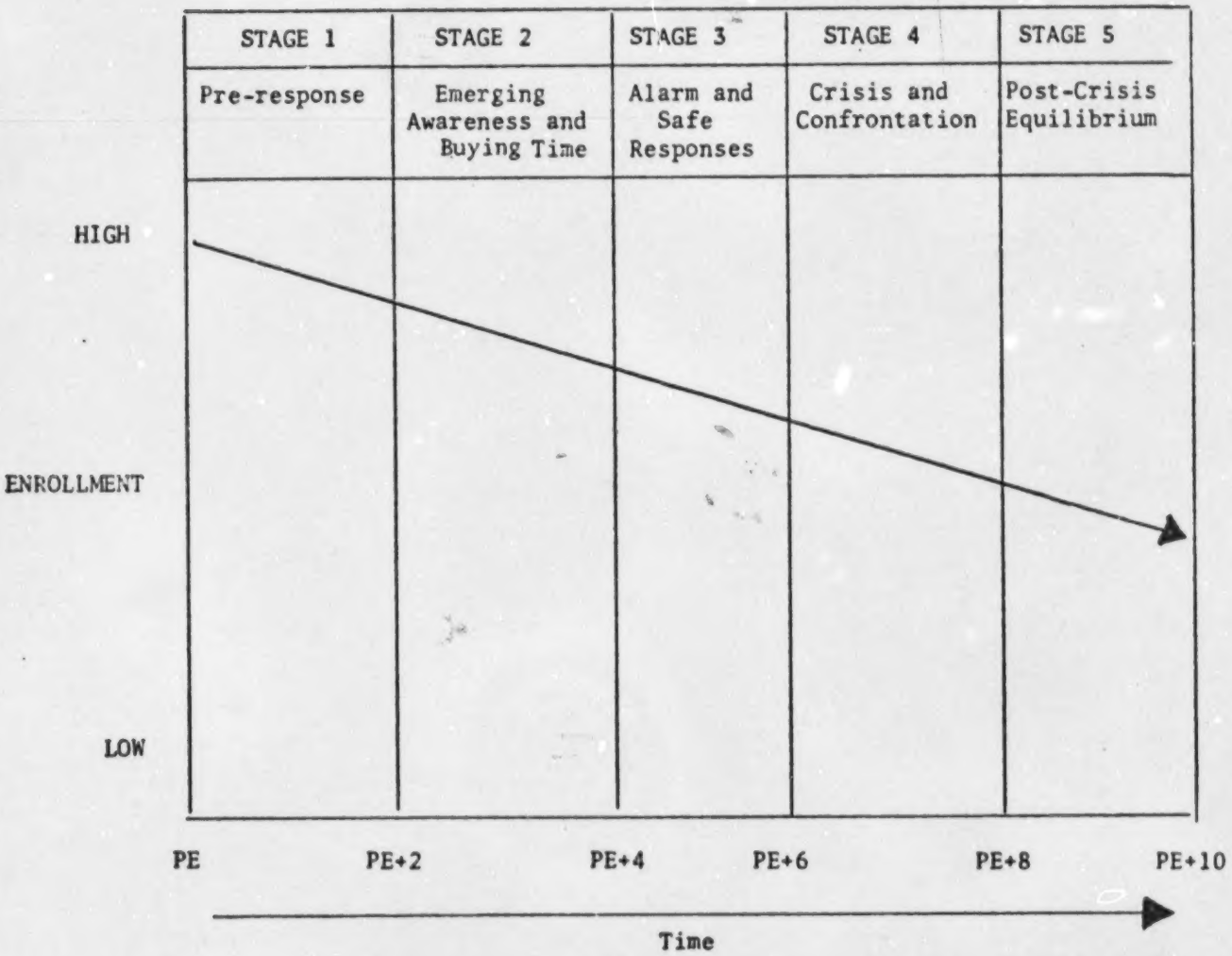

Table 1

Anova With Repeated Measures and Cochran's Test for 15 Organization Character Variables Over Five Data Points

	VARIABLE	n	F-ratio	Q*	Significance
	Structure				
1.	Utilization data	34	12.43		$p < .001$
2.	Admin./Instructor ratio	23	1.23		ns
3.	Pupil-teacher ratio	38	3.20		$p < .05$
4.	Per-pupil expenditures	37	10.57		$p < .001$
5.	Pupil-administration ratio	25	2.93		$p < .05$
	Relations				
6.	Board-superintendent conflict	51	1.50		ns
7.	Board-community conflict	51	3.13		$p < .05$
8.	Succession	35		8.67	ns
	Retrenchment				
9.	Initiate referendum	38		9.27	ns
10.	Serve new clients	39		17.21	$p < .01$
11.	Rent facilities	38		39.67	$p < .001$
12.	Hiring freeze	37		23.18	$p < .001$
13.	Early retirement	36		50.04	$p < .001$
14.	RIF	39		27.93	$p < .001$
15.	School closings	38		19.85	$p < .001$

*Frequencies for variables 8-15 were coded 1 = yes, occurred during this stage; 0 = no, did not occur during this stage. The chi square distribution is used for the Cochran Q statistic, df = K-1. Thus, df = 4 (5 - 1 = 4).

Table 2

Newman-Keuls Post-Hoc Comparison Test and Relationship Variables

Variable	STAGE 1 (PE+2)	STAGE 2 (PE+4)	STAGE 3 (PE+6)	STAGE 4 (PE+8)	STAGE 5 (PE+10)	OVERALL SIGNIFICANCE	NEWMAN-KEULS STATISTIC (PE+4/PE+6)	NEWMAN-KEULS STATISTIC (PE+4/PE+8)	NEWMAN-KEULS STATISTIC (PE+4/PE+10)	df
Utilization ratio (n = 34)	$\bar{X}$: .96[1]	.91	.85	.79	.77	$p < .001$	3.00	6.00**	7.00**	4,29
Admin/Instructor (n = 23)	$\bar{X}$: 76.98[2]	74.83	79.35	75.92	76.26	ns		-	-	-
Pupil-teacher ratio (n = 38)	$\bar{X}$: 21.38[3]	20.71	20.66	20.19	20.20	$p < .05$	3.40	3.74*	3.70*	4,33
Per-Pupil Expenditures (n = 37)	$\bar{X}$: 1.16[4]	1.37	1.59	1.89	2.56	$p < .001$	3.83	8.83**	15.01***	4,32
Pupil-Admin. Ratio (n = 25)	$\bar{X}$: .39[5]	.36	.30	.30	.29	$p < .05$	3.00	3.00	4.02*	4,20
Board-Superintendent Conflict (n = 51)	$\bar{X}$: 1.78[6]	1.88	2.15	2.20	2.16	ns		-	-	-
Board-Community Conflict (n = 51)	$\bar{X}$: 2.39[6]	2.58	2.90	3.29	3.23	$p < .05$	2.67	5.42**	5.30**	4,46
Succession (n = 35)										
Did occur	7[7]	2	6	5	2	ns		-	-	-
Did not occur	28	33	29	30	33					

* $p = < .05$
** $p = < .01$
*** $p = < .001$

NOTES: [1]Ratio divides students per school in given year by students per school in the PE year; thus, 1.0 equals full utilization.

[2]Ratio gives the number of instructors per administrator. Since F-ratio failed to reach significance, post-hocs were not calculated.

[3]Ratio gives the number of students per teacher.

[4]Ratio gives per pupil expenditures (000 removed), adjusted for inflation.

[5]Ratio gives the number of pupils per administrator (000 removed).

[6]Range of scores = 1 to 5.

[7]Frequencies of occurrence.

Table 3

Chi Square Post-Hoc Comparison Tests on Retrenchment Responses

Variable	STAGE 1 (PE+2)	STAGE 2 (PE+4)	STAGE 3 (PE+6)	STAGE 4 (PE+8)	STAGE 5 (PE+10)	COCHRAN Q OVERALL SIGNIFICANCE	CHI-SQUARE STATISTICS PE+4/PE+8	CHI-SQUARE STATISTICS PE+4/PE+10
Initiate referendum	(n = 38)	(n = 38)	(n = 38)	(n = 38)	(n = 38)	ns	-	-
Did occur	16	19	19	16	14			
Did not occur	22	19	19	22	24			
Serve new clients	(n = 39)	(n = 39)	(n = 39)	(n = 39)	(n = 39)	$p < .01$	1.34	3.92*
Did occur	11	11	15	16	21			
Did not occur	28	28	24	23	18			
Rent out facilities	(n = 38)	(n = 38)	(n = 38)	(n = 38)	(n = 38)	$p < .001$	8.27**	19.21**
Did occur	4	7	12	20	27			
Did not occur	34	31	26	18	11			
Enact hiring freeze	(n = 37)	(n = 37)	(n = 37)	(n = 37)	(n = 37)	$p < .001$	.86	3.96*
Did occur	13	17	22	22	27			
Did not occur	24	20	15	15	10			
Stimulate early retirement	(n = 36)	(n = 36)	(n = 36)	(n = 36)	(n = 36)	$p < .001$	2.57	14.78***
Did occur	4	6	6	13	23			
Did not occur	32	30	30	23	13			
Reduce teachers in force	(n = 39)	(n = 39)	(n = 39)	(n = 39)	(n = 39)	$p < .001$	3.32	10.08**
Did occur	12	14	15	21	27			
Did not occur	27	25	24	18	12			
Close schools	(n = 38)	(n = 38)	(n = 38)	(n = 38)	(n = 38)	$p < .001$	3.43	10.32**
Did occur	10	13	20	20	26			
Did not occur	28	25	18	18	12			

*$p < .05$
**$p < .01$
***$p < .001$

Table 4

Multiple Comparison Tests for PE + 4/PE + 10 on 15 Variables

	VARIABLE	PE + 4/PE + 10 STATISTIC[1]	SIGNIFICANCE
1.	Utilization ratio	7.00	$p < .01$
2.	Adminis./Instructor ratio[2]	-	ns
3.	Pupil-teacher ratio	3.70	$p < .05$
4.	Per pupil expenditures	15.01	$p < .001$
5.	Pupil-administrator ratio	4.02	$p < .05$
6.	Board-superintendent conflict	-	ns
7.	Board-community conflict	5.30	$p < .01$
8.	Succession	-	ns
9.	Initiate referendum	-	ns
10.	Serve new clients	3.92	$p < .05$
11.	Rent facilities	19.21	$p < .01$
12.	Enact hiring freeze	3.96	$p < .05$
13.	Stimulate early retirement	14.78	$p < .001$
14.	Reduce teachers in force	10.08	$p < .01$
15.	Close schools	10.32	$p < .01$

[1]Variables 1-7 were tested with Newman-Keuls multiple comparison test; Variables 8-15 were tested with chi square.

[2]Post-hocs were not computed when F-ratio (see Table 1) was insignificant.